C/B INTERNATIONAL
MYCOLO[illegible] ITITUTE

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Mentions are also made of the more conspicuous of the fungi affecting economic plants in various bulletins of the Porto Rican Agricultural Experiment Station and reports of the Board of Commissioners of Agriculture.

In addition to the above, reports have been made upon my own collections by Arthur, J. C.[5]; Young, Esther[6]; Garman, Philip[7]; Stevens, F. L.[8]

Several other articles based on this collection are presented at this meeting.

In the present report are listed only fungi not noted in the above mentioned articles. My collections are as yet far from being determined, and this list represents merely part of the few specimens that have been studied. Unless otherwise indicated, the specimens were collected by the author, and the numbers given are those of his collection as deposited in the herbarium of the University of Illinois.

For determination of the flowering hosts I am greatly indebted to Dr. N. L. Britton and Mr. Percy Wilson; for fern determinations to Miss Slosson, for grass determinations to Mrs. Agnes Chase. The Hymenomycetes were determined by Dr. W. A. Murrill, the Myxomycetes by Dr. T. H. McBride, the Ustilaginales by Dr. G. P. Clinton.

Myxomycetes

Diachea Fries

Diachea leucopoda (Bull.) R. on *Pitcarnia angustifolia*, Sta. Ana, 6683; on Pitcarnia sp., Preston's Ranch, 6705.

Physarum Pers.

Physarum sp? on Opuntia sp., Guanica, 320.

Comatrichia Preuss.

Comatrichia longa Peck., on (?), Porto Rico, no number.

Tilmadoche Fries

Tilmadoche compacta Wing, (probably), Porto Rico, no number.

5. Uredinales of Porto Rico based on collections of F. L. Stevens, Mycologia, 7: 168-196, 227-255, 315-322; 8: 16-33. Sept., Nov., 1915; and January, 1916.
6. Studies in Porto Rican Parasitic Fungi, Mycologia, 7: 143-150, May, 1915. Studies in Porto Rican Parasitic Fungi II., Mycologia 8:42-46, January, 1916.
7. Some Porto Rican Parasitic Fungi I., Mycologia 7: 333-340, November, 1915.
8. The Genus Meliola in Porto Rico, Illinois Biological Monographs, No. 4, April, 1916, and Meliolicolous parasites and Commensals. Botanical Gazette, in press.

PHYCOMYCETES

Chytridiales

Synchytrium De Bary and Woronin

Synchytrium decipiens Farl. on *Rhynchosia reticulata*. Quebradillas, 5128, Cabo Rojo, 2278. 2144.

PERONOSPORALES

Albuginaceae

Albugo (Pers.) Russell

Albugo ipomoeae panduranae (Schw). Swing., on *Ipomoeae batatas*, Monte de Oro, 5732, Tanama Rio, 7886, Consumo, 894, Arecibo-Lares road, 7306, Manati, 7706, Corosal, 410, Luquillo 2780, Boqueron, 342, Guanica 340, 346a, Guayanilla, 5898; on *Ipomoeae pes caprae*. Santurce, 247, Dos Bocas, below Utuado, 6636, Guanica, 6834, Boqueron, 346, Mayaguez, 7502, Point Cangrejos, Stevenson, 5455. The Albugo on this host is especially conspicuous, causing much distortion of the parts affected. On *Ipomoeae tiliaceae*, San German, No. 5610. Garrochales, 3763, (Stevenson). On *Jacquemontia nudiflora*, Guayanilla, 5905, Mona Island, 6357. On *Ipomoea* sps. Rio Piedras, 5772, Peñuelas, 9142, Mona Island, 6236, 6208, 6080.

Albugo platensis (Speg.) Swing., on *Boerhaavea erecta*, Guanica, 319a, Guayanilla, 5896, Mona Island, 635.

Albugo bliti, (Biv.) Ktz. on Amarantus sp. Jajome Alto, 5679; on *Amaranthus viridis*, Rio Piedras, (Stevenson), 3870.

Albugo candida (Pers.) Kuntze; on *Lepidium virginicum*, Tanama Rio 7822, Comerio (dam). 5035, (Stevenson).

Albugo portulacae. On *Portulaca oleracea*, Mayaguez 7052.

PERONOSPORACEAE

Peronoplasmopara (Berl.) Clint.

Peronoplasmopara cubensis, (B. & C.) Clint. On cucumbers, Rio Piedras 3621, (Stephenson). On *Luffa cylindrica*, Rio Piedras, 7004.

CENANGIACEAE

PEZIZALES

Ephelis Fries

Ephelis sp., on *Erichloa subglabra*, Rio Piedras, 4195, (Johnston).

PHACIDIALES

TRYBLIDIACEAE

Triblidium Duf.

Tryblidium refulum (Spreng.) No. 6737.

ASPERGILLALES

ASPERGILLACEAE

Penicillium Link

Penicillium digitatum (Fr.) Sacc. On grapefruit. Palo Seco. 3976, (Stevenson).

MYRIANGIACEAE

Myriangium Dur.

Myriangium duriaei Mont. On white scale. Palo Seco. (Stevenson) 3886.

PERISPORIALES

ERYSIPHACEAE

Though diligent search was made for powdery mildews with perithecia, none were found in Porto Rico. The conidial stage occurred on many hosts and with great frequency. It is of course impossible to make satisfactory determination of the genera and species of these without perithecia. The following Erysiphaceae represent merely collections of Oidium and are given with the names of the species to which they may belong, i.e., with these species which are known to occur on these hosts.

Microsphaera Levéillé

Microsphaera euphorbiae (Pk.) B. & C. (?) On *Chamaesyce brasilienses*, Mona Island, 6100, Maricao, 4805, Peñuelas, 4176; on *Chamaesyce hypersicifolia*, Mona Island, 6405, Jajome Alto, 5639; on *Hibiscus sabdariffa*, Mayaguez, 5775; on Manihot, Preston's Ranch, 6606.

Microsphaera diffusa D. C. (?) On *Meibomia* sp. Rosario, 4801; on *Meibomia supina*, Utuado, 6867, Jayuya, 6075; on *Meibomia scorpiurus*, Manati, 5301, Guayama, 5332; on *Meibomia adscendens*, Utuado, 4420, *Crotalaria retusa*, Sta. Ana, 3967, Coamo, 843, 5105.

On *Meibomia tortuosa*, Peñuelas, 9146, on *Meibomia* sps. *Mona Island*, 6197.

Sphaerotheca Léveillé

Sphaerotheca humuli (D. C.) Burr. (?) On Verbena (cult.); on Rosa (cult.), Maricao, 767, 4005; on Cosmos

—; on Bidens, sp. Jayuya, 6074, on *Bidens reptans,* Vega Baja, 476, Maricao, 4483; on *Xanthium longirostre,* Añasco, 8740, Guayama, 5406; on *Melanthera canescens,* Utuado, 6039, 652, on *Ocimum micranthum,* Utuado, 8062.

Erysiphe Hedwig

Erysiphe cichoracearum D. C. (?) On Dahlia, Monte Alegrillo, 2358; on *Solanum torvum,* Rosario, 4816, Preston's Ranch, 6696, Cabo Rojo, 2239; Maricao, 2367, Arecibo, 6800; Naguabo, 9388, Peñuelas, 9161, 9145, Mayaguez, 7064, 7322, Hormigueros, 7363, Maricao, 8825, 9127; on *Cosmos caudatus,* Sta. Ana, 7614, Tanama Rio, 7868; on *Eupatorium microstemum,* Maricao, 4812.

Erysiphe polygoni D. C. (?) On Cassia sp., Utuado, 6051; on *Cassia occidentalis,* Guayama, 5330. 5416, Rio Piedras, 5771, Rosario 9497, Peñuelas, 9138, Arecibo-Lares Road, 7304, 7314, Cabo Rojo 9083, Manati, 4312, 5312; on *Cassia tora.* Maricao 2368, 8902, Quebradillas, 5625, Aguada, 5084, Peñuelas, 4897, Guayanilla, 5927, 5897, San German, 5802, Guayama, 5399, Adjuntas, 6021, Mayaguez, 3024, 3882, 9152; on *Phaseolus* sp., Mona Island, 6247, Mayaguez, 6749; on *Ph. adanthus,* Aguada, 5075, on *Vigna repens,* Mayaguez, 1856; on *Chamaecrista,* Peñuelas, 9159. On *Arraciaxannthorrhiza,* Indiera Fria, 3468.

Erysiphe galeopsidis (?) On Eupatorium, Ponce, 4265.

PERISPORIACEAE

Hyaloderma Speg.

Hyaloderma piliferum Pat. on Meliola sp., determined by Patouillard. Santurce, 1368. This specimen in the Bronx collection shows a Meliola with a Calonectria upon it, but the portion which I had did not show the Hyaloderma.

Dimeriella Speg.

Dimeriella erigeronicola sp. nov. Fungus superficial, epiphyllous, black. Colonies circular, 1-4 mm. in diameter. No effect visible on the leaf tissue. Mycelium copious, straw-colored, crooked, about 1.5 μ in diameter, septate. Perithecia black, numerous, globose, 64-102 μ in diameter, bearing numerous, 15+, appendages, mostly basal, which are similar in structure to the mycelium but darker in color, 1½-2 μ in diameter, somewhat crooked, septate. Ostiole minute but distinct. Asci cylindrical, 31-34x7 μ, 8-spored, obtuse. Spore two-

celled, 7x1-5μ, hyaline or very pale yellow. Paraphyses numerous, fine, thread-like, crooked.

On *Erigeron spathulatus,* Quebradillas, 6821 (type), Maunabo, 2453, Yauco, 3240. El Gigante, 8522, Maricao, 8935; on *Erigeron pusillum,* Maricao, 8805.

Dimeriella olyrae sp. nov.

Fungus superficial epiphyllous. Spot none, the fungus coating the leaf surface evenly with black; mycelium yellow to dark brown, abundant, septate, crooked, about 3-4 μ thick with a tendency to aggregate into a film at spots. Perithecia numerous, 51-68 μ in diameter, black, slightly rough, each bearing 1-4, long, 234-300 μ, black setae. No ostiole. Asci ovate, 51-65x24 μ, 8 spored; spores inordinate, 17x7 μ, 1-septate, hyaline. No paraphyses.

On *Olyra latifolia,* Preston's Ranch, 6770 (type), Maricao, 3639, 190, 3472, 8959, 8942, Mayaguez, 7486, 7587.

This fungus is striking in the abundance of perithecia and the long, black setae on these. It clearly differs from *Dimerosporium oligotrichum* Mont. & Sacc. (Not Sacc. & Berl.) which according to v. Hohnel belongs to the Capnodiaceae.

Dimeriella cordiae (P. Henn.) Th. On *Cordia sulcata,* Mayaguez, 975.

Dimerium grammodes. On *Meibomia barbata,* Rio Piedras, 7007.

Perisporium Fries

Perisporium truncatum sp. nov.

Hypophyllous, forming smoky patches 1-2 cm. in diameter. Mycelium copious, superficial, brown, uniform, 7 μ, with septa about 50 μ apart, branches often at right angles. Hyphopodia none. Mycelial setae erect, simple, straight, septate, 310 μ long, 3.5 μ thick at top, 8 μ at base. Perithecia spherical, astomate, slightly rough, 109-202 μ, carbonous; cells about 17 μ in diameter. Asci ovate to cylindric, 125x34 μ, thin walled. Spores 2-septate, cylindric, 68-92x10 μ, hyaline when young, smoky or darker when old, rounded at one end truncated and with a ring around the other end.

On *Inga laurina,* Maricao, 3657, 7023, Mayaguez, 7049 (type), 7477, 7038, 7474, 9137, 974, 3905, 1076, El Alto de

la Bandera, 8273, 7559, Coamo 605. On *Inga vera* Maricao, 762. It differs decidedly from *Zukalia fusispora* Pat. as described on Inga.

It is often overgrown by a fungus which has a fine white mycelium which weaves into a close mat forming white spots from a few millimeters to a centimeter or more in diameter.

Perisporium bromeliae sp. nov.

Spots hypophyllous, smoky, 1-2 cm. in diameter. Mycelium superficial, abundant, brown-black, septate, sparsely branched. Perithecia irregular, globose, 110-120 μ, no ostiole. Asci ovate fasciculate from base of perithecium, numerous, 50-58x20 μ, 4-spored, no paraphyses.

Spores fusiform, straw-colored, irregularly 0, 1, 2 or 3-septate, 30x8-10 μ, not constricted at the septa.

On *Bromelia pinguin*, Manati, 4329. (type), 1832, Utuado 6577, 8081, Mayaguez, 3912, 7573, 7034, 7094, 7426, Rio Tanama, 7999, 8106, Sta. Ana, 7613, Cataño 7708, Vega Baja 7719, Florida Adentro, 7679, Lajas, 7150, Hormigueros, 7370, Coamo, 8355, 8356, Maricao, 8925, Añasco 8751.

This is very common on the host in all parts of the island. The smoky blotches are so usual as to seem to belong to the plant. The perithecia are almost exclusively found in the furrows or grooves between the heavy veins.

This fungus in its perithecium clearly shows its relationship to the Perisporiales, but within that order its position is much less certain. The spores vary much in septation, being from 1 to 4-celled in spores which are fully mature. In the Phaeosporae there is a general resemblance to Cephalotheca but the ascus structure is not that characteristic of that genus. In the Phaeophragmiae where the fungus evidently belongs, it differs distinctly from Meliola in many respects, especially in character of mycelium and spores: From Schenckiella in spore characters: from Perisporina in mycelial and spore characters. Its agreement seems to be most close with Perisporium from the description of which it differs in its 4-spored ascus. Notwithstanding this difference, however, it seems best to place the species in Perisporium.

Perisporium portoricense sp. nov. Stevens and Higley. Fig. 1.

Colony, dark brown, round, scattered, hypophyllous or epiphyllous, sometimes amphigenous, 0.5-1.0 cm. in diameter or by coalescence occupying the leaf. Mycelium copious, diffuse, dark, smooth, hyphae branching at nearly right angles, 7-9 μ in diameter. No hyphopodia. Perithecia numerous, globular, black, gregarious, carbonaceous, without appendages, ostiole or paraphyses, surface slightly rough, 175-270 μ in diameter. Asci cylindrical, 8-spored, oblong, obtuse, stipitate, attached basally, 37-50x92-125 μ. Spores slightly curved, obtuse at apex, base somewhat acute, 3-septate, separating at septa, end sections more or less conical, 8-9 μ x 70-80μ.

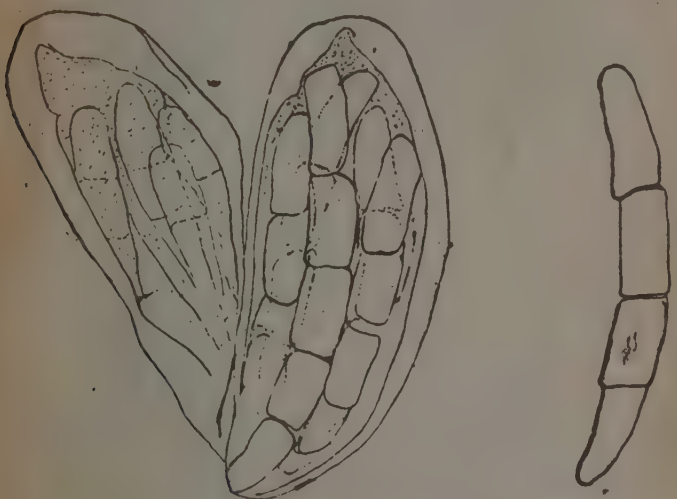


Fig. 1. *Perisporium portoricense*. Asci and spores. 7489 (type). Drawn by R. Higley.

On *Calophyllum calaba*, Mayaguez Mesa: 7489 (type). Vega Baja, 4310.

The mycelium bears numerous curved hyphae standing upright. The ascus walls are hyaline and very thick except at the apex where there is a slight notch on the inner surface.

The fungus is peculiar in that sometimes it is quite strictly limited to upper surfaces, again to lower surfaces while it is

sometimes amphigenous. The spores when young show no indication of falling into segments and are straight and smooth. It is only in quite mature asci that they show the character as given in Miss Higley's drawing. In earlier condition and as more often seen they would indicate that the fungus belongs to the genus Perisporina of Henning.

Perisporiopsis gen. nov.

Type P. wrightii

Perisporiopsis wrightii (B. & C.) comb. nov.

Perisporium wrightii B. & C.

On Opuntia. Mayaguez, 6293, Ponce, 6778.

These specimens in their general appearance, which is very distinctive, agree closely with the excellent description given by Wolf of Texan material.[1] and with a sporeless fragment of Wolf's material which was loaned to me from the New York Botanical Garden. The rare character of spores of violet-color turning to brown with age, seems to make it certain that the Porto Rican specimens are co-specific. The affinity with the Plectascineae as shown by Wolf's drawings (Fig.c, p. 126, l.c.) and by my own observations, and the additional character that the spores are frequently muriform, prevent regarding this fungus as a Perisporium. It differs distinctly also from Meliola, Pleomeliola and Cleistotheca, and the above named genus is therefore created for it.

Perisporina P. Henn.

Perisporina lantanae sp. nov.

Fungus hypophyllous forming an abundant sooty coating, thickly strewn with perithecia. Mycelium dark straw colored to black, many septate, about 4 μ in diameter, without hyphopodia. Perithecia 110-130 μ in diameter when mature, when young, surrounded by an areola of radiating hyphae, densely beset with setae which in general nature are like the mycelium, varying from 70 to 480 μ long, about 7 μ thick at base, many septate, dark. Perithecial wall closely reticulate; perithecium irregularly globular, non-ostiolate. Asci 61-68x17-20 μ, 8-spored, inordinate. Paraphyses hyaline, filamentous, branched. Spores 2-3 septate, apparently usually 3-septate when mature, dark, 34-37x6-7 μ, two cells larger than the other two.

On *Lantana camara* Lares, 4924 (type). 4926.

1. Ann. Myc. 10:125, 1912.

Dimeriopsis gen. nov. Fig. 2

This genus of the Dimerineae is characterized by the development of the perithecia below a mycelial skin. Type *D. arthrostylidicola.*

Dimeriopsis arthrostylidicola sp. nov. Fig. 2.

Spots black consisting of superficial mycelium encircling the stems, 0.5 to 2 μ long. Mycelium coarse, 4-5 μ, somewhat crooked, brown, densely interwoven and matted in older portions, at edges radiate. Hyphopodia none. Setae 312 μ long by 10 μ thick, thick-walled, numerous on older mycelium. Perithecia 400-450 μ in diameter developed below the mycelial layer, sides and top well developed, of brown hyphae, base extremely thin, hyaline. Ostiole none. Asci numerous, 100-150x 25-30 μ, clavate, thick-walled, with a thin spot at the apex, 8-spored. Paraphyses present, filamentous, matted, gelatinizing. Spores straight to slightly falcate, inordinate, 2-celled, rarely 4-celled, dark brown, constricted at septa, 12-14x40-55 μ obtuse.

On *Arthrostylidium sarmentosum.* Monte Alegrillo, 4772 (type).

Fig. 2. *Dimeriopsis arthrostylidicola* (a) Tip of an ascus showing spores and the apical thin spot. (b) Spores showing the constriction at the septa, 4772. Drawn by J. MacInnes.

This fungus, clearly Perisporiaceous, in its superficial mycelium, and general characters falls within the Dimerineae,[1] and close to Dimerium. From this genus, however, it differs radically in charcater of the perithecium, very large size and peculiar shape of spores and the presence of abundant paraphyses. The most striking feature is that the perithecia develop below the mycelium, i. e., the mycelium over a considerable area coalesces to form a continuous black skin which is, however, only one layer thick; and below this skin in a partially de-

1. Theissen, Bot. Cent. 29:46.

veloped hyaline stroma are the perithecial cavities. In teasing a specimen the asci and paraphyses adhere together and often fall out entire, like the meat from the shell of a nut, leaving a mold of their form behind.

Meliola Fries.

Meliola melastomacearum Speg. On *Miconia impetiolaris*, Mayaguez, 3922; on *Heterotrichum cymosum*, Utuado, 4359.

Meliola sp. indet. On *Podocarpus coriaceous*, Maricao, 6774.

The mycelium here is unquestionably that of Meliola, but no perithecia are present. The specimen is worthy of note since no Meliola is recorded on this host or its family.

Meliola leguncullariae. E. On *Conocarpus erecta*, Mayaguez, 7201.

Microthyriaceae

The representative of this family, one of the most common in the tropics, will be the subject of a separate paper.

Hypocreales

Hypocreaceae

Hyalosphaera, gen. nov. type *H. miconiae*.

Hyalosphaera miconiae, sp. nov.

Spot indefinite, roughly circular, above pale to yellow, 3-10 mm. in diameter; below pale and coated with buff mycelium centers ashen-grey due to ascospore color, mycelium 5 μ, septate, branched, hyaline.

Perithecia, smooth, spherical to ovate when mature, hyaline, transparent, entirely closed when young, open at top when mature, 80-100 μ in diameter, without stroma or subicle; wall 4 μ thick at top, and sides, transparent, opening by apical rupture but without a differentiated ostiole. Asci clavate to oblong, obtuse, thin-walled, numerous, originating from the pseudoparenchymatous base of the perithecium, 8-spored, spores longitudinal. Paraphyses numerous, exceeding the asci, very fine, 1 μ. Spores linear, 2-3 usually 3, septate, smokey to brown, 40-57x5 μ.

On *Miconia laevigata*, Arecibo, 6804, Utuado, 6862, 6871, Maricao, 207 (type) 4822, Aguas Buenas, 302, Ponce, 4338, Yabucoa, 6705.

This fungus forms buff-colored spots over the lower surface of Miconia leaves and though its internal mycelium was not demonstrated, there are formed distinct spots on the host, areas that are yellowed or bleached. In the centers of the older spots are seen regions of ashen-grey appearance that might lead one to suspect the presence of a Cercospora. Examination, however, shows this ashen-grey region to be due to myriads of transparent perithecia containing dark ascospores. It is possible with a scalpel to lift from the leaf several square millimeters of the fungous weft, for microscopic examination. It proves to be made of an exceedingly loosely woven hyaline mycelium.

Borinquenia gen. nov.

Ety. from *Borinquen*, the ancient name of Porto Rico. Perithecium fleshy or membranous, ostiolate, reddish; asci fasciculate, basal, paraphyses present; spores linear, septate, brown. Type of genus the following:

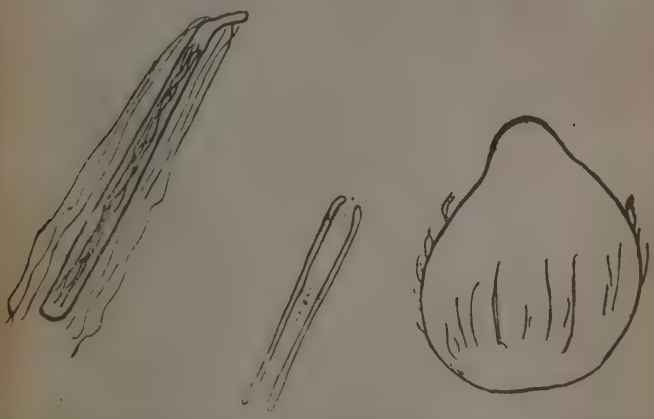


Fig 3. *Borinquenia miconiae*. Perithecium, ascus, paraphyses and spores, 6871a (type). Drawn by J. MacInnes.

Borinquenia miconiae sp. nov. Fig. 3.

Spot none. Mycelium buff to tawny, superficial. Perithecia abundant, ovate, papillate, hyaline, wall pseudo-paren-

chymatous, rough with rather numerous short, coarse hairs, especially around the base, 180 μ high, 150 μ thick.

Asci numerous, cylindric, 60-55x7-8 ×, obtuse, thin walled, 8-spored. Paraphyses numerous, thread-like, 1-1½ μ, longer than the asci; spores linear, smoky, guttulate, obtuse, 55-65x 2-3 μ, usually crooked, septa not seen.

On *Miconia laevigata*, Arecibo, 6804, Utuado, 6862, 6871, (type.)

In the Saccardian classification, this fungus would fall in the Hypocreaceae-scolecosporae-phaeoscoleciae, in which there is only the genus Konradia from which it is clearly distinct. In the classification of Lindau it falls in the Hypomyceteae and near the genera Globulina and Torrubiella from both of which it presents marked differences.

Dexteria gen nov.

In honor of Dr. E. G. Dexter, whose liberal views so benefited Porto Rico.

Mycelium superficial or mainly so. Perithecium astomate, the wall reduced to extreme tenuity or becoming gelatinized and amorphous, thus leaving the asci naked or nearly so, at maturity. Type *Dexteria pulchella*.

The genus is somewhat like Colonectria but is distinguished from it by the gelatinization of the perithecial wall and by general habit.

Dexteria pulchella, sp. nov. Fig. 4.

Mycelium hypophyllous, reddish, superficial, scant; spot none. Perithecia containing from 18-25 asci. Asci when mature, naked or covered only by a mucilaginous residue of the perithecial wall. Surrounded at base by a few loosely intertwined strands of reddish-brown mycelium about 3 μ in thickness. Dimension of ascus exclusive of subtending mycelium 65-100 μ. Asci clavate to ovate to elliptical, 50x15-22 μ, 8-spored, obtuse, thin-walled. Paraphyses none. Spores linear, 35-42x4-5 μ, hyaline, 5-septate. Pycnidia similar in structure but larger, 110-130 μ, slightly darker in color, Conidia similar to ascospores but smaller, 17-21x3 μ, and 3, not 5-septate.

On *Paullinia pinnata*, Mayaguez, 1207 (type).

This fungus is barely visible as a brick-red discoloration of small areas of the lower side of the leaf. The lens shows this color to be due to myriads of minute perithecia and pycnidia intermingled.

Under the microscope the fungus appears as one of exquisitely delicate beauty. The basal wreath of hyphae marks on its inner side an almost exact circle. Within this circle the asci develop and remain together, covered by a structureless gelatine which when young barely reveals its origin in a loose network of fine mycelial threads. The perithecium is perfectly transparent. So transparent are all structures that the asci may readily be counted looking through the perithecium, either from above or below.

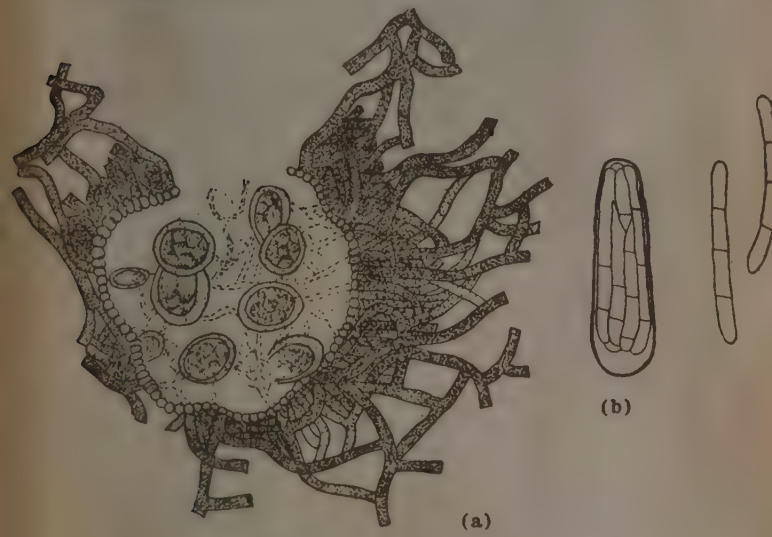


Fig. 4. Dexteria pulchella
(a) Perithecium showing wreath of hyphae surrounding the asci from which the covering has disappeared. The rupture on one edge was caused by the cover glass.
(b) An ascus.
(c) Spores. 1207 (type), drawn by J. MacInnes.

Nectria Fries

Nectria ochroleuca (Schw.) Berk. Sta. Ana, 6757.

Creonectria Seav.

Creonectria gramnicospora (Ferd and Wge) Seaver. On dead wood. Rio Piedras, (Stevenson) 3896, 6736.

Megalonectria Sacc.

Megalonectria pseudotrichia (Schw.) Speg.

On host not named. Pueblo Viejo (Stevenson) 5064.

Specimens 1569 and 1193 had no perithecia but a Stilbum which is probably the conidial stage of *Megalonectria pseudotrichia.*

Ophionectria Sacc.

Ophionectria coccicola E. & E.

On scale on grapefruit. Pueblo Viejo, (Stevenson), 5145.

Stilbocrea Pat.

Stilbocrea hypocreoides (K. & C.) Seaver.

On rotten wood. Espinosa (Stevenson), 2425.

Balansia Speg.

Balansia discoidea P. Henn.

On *Aristida portoricensis* Mayaguez, 6011 (Mrs. A. Chase)[1]

Dothicloe Atk.

Dothicloe atramentosa (B & C). Atk.

On (Serrillo) *Andropogon leucostachyus,* Las Marias, 8211.

Dothichloe aristidae Atk.

On *Aristida portoricensis,* Mayaguez[1], 6011, Mrs. A. Chase, on *Ichnanthus pallens,* Maricao, 778.

Claviceps Tul.

Claviceps paspali S. & H.

On *Paspalum plicatulum,* Rosario, 3784, Ponce 4371, Cataño 5783, 4188, Añasco, 3536, Coamo, 4909, Mayaguez, 227. This sclerotial stage of Claviceps is as common on *Paspalum plicatulum* in Porto Rico as it is on *P. laeve* and *P. dilatatum* in the States. The species is very probably either *C. paspali* S. & *H.* or *C. rolfsii* S. & H.[2] but which of these it is impossible to determine without germinating the sclerotia, which was not done.

1. Host determined by Mrs. Chase. Fungus by Dr. Atkinson.
2. Stevens, F. L., & Hill, J. G. Three interesting species of Claviceps. Bot. Gaz. 50:460-463, Dec. 1910.

Ustilaginoidea Bref.

Ustilaginoidea usambarensis P. Henn. on *Panicum laxum*, Monte de Oro, 5708, 5671, El Alto de la Bandera, 4365, 4370, 8660.

DOTHIDIALES

Phyllachora Nke.

Phyllachora graminis (Pers.) Fcl.

On *Paspalum conjugatum;* Vega Baja 9269, 9236, El Alto de la Bandera, 8720, on *Valota insularis* Quebradillas, 9228, 7260, Sta. Ana 7622, Vega Baja 9262, Coamo 8334, on *Paspalum virgatum* (?) Utuado, 8075, on *Arthrostylidium sarmentosum*, Utuado, 4388.

Phyllachora perforans (Rehm) Sacc & Syd.

On *Securedoca virgata*, Mayaguez, 7402, Rosario, 9491, Maricao, 8981. Specimens previously reported by Garman as on Abrus were on this same host.

Phyllachora scleriae Rehm.

On *Scleria pterota* Sabana Llana, 9370.

The specimen agrees well with the description given by Theissen and Sydow. The differences between this species and *P. cypri* Rehm are not large.

SPHAERIALES

SPHAERIACEAE

Phaeospora Zopf

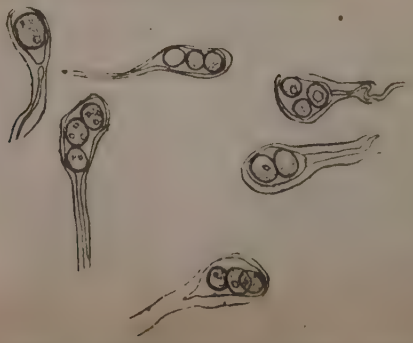
P. cacticola sp. nov.

Spots 5-10 mm. long, entirely or partially encircling the stems, surface wrinkled, thickly covered with perithecia. Perithecia subcuticular, 80-150 μ in diameter, black, ostiolate and erumpent when mature. Asci oblong to elliptical, 60-75x13-25, thin-walled, 4-spored, inordinate. Spores elliptical to oblong, obtuse, 3-septate, dark when mature, 34-37x9 μ.

1. Host determined by Mrs. Chase.

Fig. 5. *Corynelia clavata*, var. *portoricensis* var nov.
(a) Habit sketch showing colonies on leaf.

(b) Perithecia showing the two-lipped apex.



(c) Asci showing irregular form and variable numbers of spores. Drawn by J. MacInnes.

diameter, thick walled, dark, smooth, 1-celled. Conidia oblong-fusoid; otherwise as in the type. On *Podocarpus coriaceous* near Maricao. 784 (type,) 810, 6713, 6722, 3576, 4363, 8858, 5820.

This differs from *C. clavata* (L.) Sacc. which is reported on *P. thunbergii, P. elongata*, and *P. totarac*, in its narrower asci, larger spores, and few-spored ascus, and from the other forms of Corynelia, *C. clavata var. macrospora* Syd. on *P. milanjiani*, *C. arcophila* (Speg.) Starb, on Podocarpus sp., *C. carpophila* Syd. on Rapanea in size of spores and ascus and number of spores per ascus.

Corynelia pteridicola sp. nov. Fig. 6.

Spots from less than a millimeter to 3 or 4 mm. in diameter, fungus usually though not always hypophyllous. Stroma small, 0.5-3 mm. in diameter, the central part falling out with age and the stroma thus becoming annular. Perithecia numerous, solitary on long stalks which arise from the stromata. Perithecial stalks about 500 μ long, 60 μ thick, sporogenous region about 160x95μ, beak extending about 200-300 μ beyond the sporogenous region. Perithecial stalk hairy with brown mycelium, 10-45x3 μ, sporogenous region and beak glabrous. Total dimensions of perithecial structure 900-1090x60 μ. Asci, thin-walled, irregular in shape, 8-spored, 20-27x7 μ. Spores spherical, dark, 1-celled, 4 μ in diameter.

On Campyloneurum sp. Añasco, 3551.

The species differs markedly from other Corynelias in the size of its spores and in its long-stalked perithecia.

All the leaf tissue in a minute circular area is consumed and replaced by the fungus forming a stroma. From this arise numerous stalked perithecia. The central part of the stroma after sporing drops out, leaving only the opposite epidermis, or often a hole. The cavity thus formed in the leaf is surrounded by a ring-shaped stroma the thickness of the leaf or a trifle thicker and less than half a millimeter in breadth. This continues to produce stalked perithecia, advancing into new tissue and falling away in the older portions, thus a diseased spot a few days old is a hole surrounded by the ring of stroma which bristles with the numerous black, stalked perithecia.

Fig. 6. *C. pteridicola* sp. nov.
a. Habit sketch showing spot of young growth and a hole surrounded by the stromatic border and giving rise to perithecia.

b. Sketch to show perithecia arising from the stroma.

c. Stalked perithecia, the swollen part bears the sporogenous cavity. Drawn by J. MacInnes.

On *Rhipsalis cassytha*, Monte de Oro near Cayey, 5662 (type).

This fungus is remarkable for its very coarse, dark mycelium 7-9 μ in diameter, and for the manner in which the mycelium penetrates vertically through the thick cambial layer.

Herpotrichia Fuckel.

Herpotrichia diffusa (Schw.) Ellis and Ev.

On cocoanut debris, Espinosa. (Stevenson) 2626.

Rosellinia Ces. and de Not.

Rosellinia subiculata (Schw.) Sacc.

On rotten wood, Garrochales. (Stevenson), 2765.

Rosellinia aquila (Fr.) de Not.

On rotten wood, Rio Piedras. (Stevenson) 3355.

CORYNELIACEAE

Corynelia Achar.

C. clavata (S.) Sacc. var: *portoricensis* var. nov. Fig. 5.

Asci long pedicilled, 70 μ, sporiferous part 34-41x14 μ, bearing 1, 2, 3, or 4, mainly 2 or 3, spores which are 12-15 μ in

A striking feature is the narrow limits of the diseased area, which comprise a region consisting of only a few host cells. Cells within the diseased area, however, become completely filled with the rather fine, dark-brown mycelium.

MYCOSPHAERELLACEAE

Mycosphaerella Johans

Mycosphaerella maculiformis (Pers.) Schr.

Sphaerella maculiformis (Pers.) Auer.

On *Inga vera*, Jayuya, 5996.

Spots sordid white, 2-4 mm. in diameter, bordered by a dark red to brown line. Perithecia numerous, scattered over the upper surface, subepidermal.

Mycosphaerella clusiae sp. nov.

Spots amphigenous, centers 3-8 mm. in diameter, ashen-gre to black, surrounded by a rose-tinted area, 3-5 mm. broa Perithecia 40-80 μ in diameter, numerous, immersed below the epidermis and erumpent. Asci numerous, 8-spored, inordinate 44-48x14 μ. No paraphyses. Spores 1-septate, hyaline, 14x4 μ

On *Clusia rosea*. Maricao, 1374 (type), 8829, 8849, Lajas 7136, Utuado 4587, Mayaguez, 7482.

The spots when hypophyllous are different in appearance from epiphyllous spots due to difference in stomatal relations When below, nearly every stoma within the diseased area is filled by a perithecium, while above the perithecia are necessarily erumpent.

Mycosphaerella mucunae sp. nov.

Spots irregularly circular, dead, 1-2 cm. in diameter, marked conspicuously with a series of roughly concentric circles, about 2 mm. apart. Perithecia numerous, black, 78-94 μ in diameter, Ostiole distinct. Asci 8-spored, 34-40x8-10 μ. Spores long and narrow, 17-20x3 μ, 1-septate, obtuse.

On *Mucuna pruriens*, Añasco, 3535.

The concentric marking of the spots and the long narrow spores are especially characteristic.

Mycosphaerella maydis (Pass.)

On *Syntherisma sanguinale*, El Alto de la Bandera, 8255

The present form agrees sufficiently well with the description of this species to enable us to regard them as the same. There are several species described on various grammeae of which the same might be said.

Guignardia Viala and Ravaz

Guignardia heterotrichi sp. nov.

Spots irregularly circular, 2-5 mm. in diameter, tan colored, bordered by a darker line which is about 1 mm. wide, center black, due to clusters of perithecia. Leaf tissue of spot killed completely. Perithecia clustered in centers of spots, occupying the mesophyll, black, 150-200 μ in diameter, ostiole small, 10-

[illegible] by J. MacInnes. [illegible] spherogenous cavity.

15 μ, but distinct. Paraphyses none. Asci 51-61x14 μ, 8-spored, inordinate. Spores slightly olivaceous, 14-7x7 μ, ovate-elliptical.

On *Heterotrichum cymosum*, Preston's Ranch, 6768 (type), Maricao, 197, Villa Alba, 116, Utuado, 4359.

The spots caused are of very distinctive character. The fungus differs from *Laestadia melastomatum* in absence of paraphyses and from *physalospora multipunctata* which has long pedicilled asci.

Guignardia helicteres, sp. nov.

Spots tan colored, circular, dead, 3-5 mm. in diameter, definitely bordered by a thin purplish line. Perithecia immersed, dark, 125-160 μ in diameter, ostiole dark bordered. No paraphyses. Asci 8-spored, 68x14-17 μ. Spores oblong, obtuse, continuous, hyaline, 17x5 μ.

On *Helicteres jamaicensis*, Barceloneta, 9260.

Guignardia clusiae sp. nov.

Spot none. Perithecia numerous, scattered over the lower surface of fallen leaves, 110-160 μ, black, sub-epidermal. Asci cylindrical, 8-spored, 65-72x7 μ. Paraphyses none. Spores 17-20x7 μ, elliptical, continuous, hyaline.

On *Clusia grundlachii*, Maricao 809, (type), 4774.

Guignardia pipericola sp. nov.

Spots circular 3-8 mm. in diameter, tissue but slightly changed and the spot evident chiefly for its perithecia. Perithecia numerous, 150 μ in diameter or oblong and 150x280 μ, black, imbedded in a gall-like structure due to hypertrophy of a few surrounding cells. Asci aparaphysate, long pediceled 85x17μ the long pedicel occupying about half of this length. Spores oval, hyaline, continuous, inordinate, 13-17x5 μ.

On *Piper medium*, Camuy, 4998 (type), Vega Baja, 370a Aguada, 5078, Trujillo Alto, 9401, Sta. Ana, 7615, Florida Adentro, 7648, Rio Tanama, 7949, 7869, 7872, Manati, 7701, Peñuelas 9148, 3592. *Piper marginatum*, Lajas, 7180, Cabo Rojo, 2244, 6472.

The fungus is widely distributed and is conspicuous on account of its perithecia which are quite regularly concentrically arranged.

Guignardia rhynchosporae sp. nov.

Perithecia spherical, opening hypophyllous, entirely invisible from above, located in the loose tissue below the epidermis about 285 μ in diameter. Paraphyses none. Asci long, narrow, long stalked, 140-150x7 μ, 8-spored. Spores 1-celled, hyaline, 27x5 μ, thicker in the middle, tapering toward the ends.

On *Rhynchospora cyperoides*, Martin Peña, 9302 (type)

Guignardia cephalariae (Aud.) var. *alternantherae* Sacc.

On *Alternanthera sessilis*, Mayaguez 7554, 9360, 49, 834, 3933, Rio Piedras, 9464, Las Marias, 8188, 8193, 7031, Utuado, 4577, Guayanilla 5913.

PLEOSPORACEAE

Physalospora Niessl

Physalospora caryophyllinicola sp. nov.

Hypophyllous. Spots abundant, especially upon the lower leaves, closely studded with the black perithecia. Perithecia sub-epidermal, globose, 60-110 μ in diameter, ostiole 20 μ, dark-bordered. Asci cylindrical, 25x8 μ, 8-spored. Paraphyses filamentous, guttulate, thin. Spores 20x5 μ, oval with one side slightly more convex than the other, guttulate.

On *Drymaria cordata* (L.) Willd. Jayuya, 5937.

Physalospora laguncularae Rehm.

On *Laguncularia racemosa*, Guanica, 363, Boqueron, 367.

It causes characteristic spots and is especially abundant on seedlings and cotyledons. The spores are slightly smaller than indicated by Rehm's description and are not clearly fusiform as he describes and figures.

Physalospora andirae sp. nov.

Spots conspicuous both above and below, tan colored, irregular in shape, rather definitely bordered. Thickly set with

perithecia which open below. Perithecia sub-epidermal, finally erumpent, tan-colored. Each perithecium surrounded by a delicate dark circle about 0.5 mm. in diameter. Asci thin-walled, 8-spored, 54-68x7 μ, spores uniseriate or inordinate, one-celled, oval, hyaline. Paraphyses many, filamentous.

On *Andira jamaicensis*, Camuy, 7277 (type). Mayaguez, 1037, 1479, 3939, 3950. Vega Baja, 461, 492, 465, San Sebastian, 5198, Maricao, 3628, Cabo Rojo, 6485, Coamo, 842, 8357, 8478, Quebradillas, 4999, Hormigueros, 218, San Germán, 5808, 842, Lajas, 7178, Tanama Rio, 7835, Arecibo-Lares Road, 7294, Martin Peña, 9315, Peñuelas 9163, Sta. Catalina, 2721.

This form is exceedingly common on Andira and has more the general aspect of insect than fungous injury. It is exceedingly well defined and easily recognizable.

Physalospora bambusae (Rab.) Sacc.

On *Lasiacis sorghoidea*, Luquillo Forest, 5427.

P. maculans, Sacc. & Troller, on Cyperus and *P. panici* on Panicum are close to the above.

CUCURBITARIACEAE

Nitzschkia Otth.

Nitzschkia nervincola Rehm.

On *Gesneria albiflora*, Maricao, 3670, 1002, 8917, 207, 735, 3498, 6718. Mayaguez, 7495, 7496, 6725.

Otthia Nits

Otthia panici sp. nov.

Stromata black, linear, 60 μ wide, 110-470 μ long or sometimes much longer, erumpent, crustose, bearing several perithecia. Perithecia imbedded in the stroma, ostiolate. Asci, long-cylindrical, monostichous, spores dark, 1-septate, 7-9x3 μ

On *Panicum maximum*, Jayuya, 5994, Preston's ranch, 6659 (type.)

Pleosporaceae

Metasphaeria Sacc.

Metasphaeria abortiva, sp. nov. Fig. 7.

Spots 3-5 mm. in diameter, circular, pale, conspicuous from both sides of the leaf, center black, bearing one perithecium or occasionally more than one. Perithecium black, 470-630x 40-50 μ, [illegible], rupturing hyphophyllous, asci thin-walled, irregularly clavate, 68x27 μ, 8-spored. Spores inordinate, 31x7 μ, 2 septate, hyaline or very faintly colored. Central cell smaller than terminal cells and apparently abortive.

On Parrotia alba, Mayaguez, 304 (type), 6782, Maricao 3457, 3465, Arecibo-Lares Road, 7315.

Fig. 7. *Metasphaeria abortiva*.
Asci with eight 3-septate spores and single spore, showing the smaller apparently abortive central cell. No. 7315 (type). Drawn by J. MacInnes.

Leptosphaeria Ces. and de Not.

Leptosphaeria sacchari V. Breda.

On cane, Añasco, 3555.

Ophiobolus Riess

Ophiobolus barbatus Pat. & Gaill.

On Vitex, 823. The ascigerous stages of this fungus were not seen but the very remarkably shaped conidia (text fig. 8) which agree precisely with those of Patouillard & Gaillard described from Venezuela (Bullt. Soc. Myc. de Fr. 4: 114,

1888 and T. IV Pl. XIX, F. 7b) indicate that the conidial form in the two instances are the same. In my specimens the terminal cells were hyaline, the other cells dark and the component parts of the spore were either 4 or 5-septate.

MELANCONIDIACEAE

Melanconis Tul.

Melanconis sacchari Mass.

On *Saccharum officinale*. Mayaguez (Fawcett.)

Fig. 8. *Ophiobolus barbatus*
A conidium showing pale end cells and dark central cells and the peculiar grouping in pairs in which they always occur. 823. Drawn by I. MacInnes.

DIATRYPACEAE

Diatrype Fries.

Diatrype stigma (Hoffm.) Fries.

On dead wood, Martin Peña (Johnston), 4974.

MELOGRAMMATACEAE

Endothia Fr.

Endothia parryi (Farl.) Cke.

On *Fourcroya hexapetala*, Indiera Fria Maricao, 216, 3494, Maricao 3496, 281, 2337, 8822, 7177, Trujillo Alto 9406.

Endothia longirostos, Earle. Santurce, 4340.

XYLARIACEAE

Nummularia Tul.

Nummularia bulliardi Tul.

On rotten wood, Rio Piedras, (Johnston), 4669.

Hypoxylon Bulliard

Hypoxylon annulatum (Schw.) Mont.

On dead wood, Palo Seco (Stevenson), 2989.

Ustulina Tul.

Ustulina vulgaris Tul.

On *Citrus aurantium*, Palo Seco (Stevenson,) 3429.

Daldinia de Not.

Daldinia concentrica (Bott.) Ces. and de Not.

On rotten wood, Palo Seco (Stevenson), 3381.

Xylaria Hill

Xylaria digitata (L.) Grev. Cabo Rojo, 2290.

Xylaria nummoroha, (Pers.) Grev. Mayaguez, 3017.

Xylaria sp. Monte Alegrillo, 1414.

Kretzschmaria Fries.

Kretzschmaria coenopus (Mont.) Karsten.

On rotten wood, Vilonito (Stevenson), 5020.

BASIDOMYCETES

HEMIBASIDII

USTILAGINALES

USTILAGINACEAE

Sphacelotheca de Bary

Sphacelotheca panici leucophasi (Bref.) Clint.

On *Paspalum* [illegible] 30 Manati, 4207. Coamo Springs, 8568.

Cintractia Cornu

Cintractia axicola (Berk.) Cornu.

On *Dichromena*, Quebradillas, 5083. Evanston, 1881, Mayaguez 5821.

On *Dichromena diphylla*, Sta. Catalina, 668, 5818, San Juan 4538, Salinas, 5720, 1798, 5874, Quebradillas, 5132, Lares 834, Rio Piedras (Stevenson), 2179.

Cintractia leucoderma, (Berk.) P. Henn. Cataño, 5782 Luquillo Forest, 5610, Manati, 5254, on Rhynchospora sp.

... 836, Cataño, 4090, Pueblo Viejo (Stevenson),

... *Rhynchospora corymbosa*, Mayaguez, 836, Cataño 5254, ... Piedras, 9277.

... *ntractia limitata*, Clint. On *Mariscus ligularis*, Manati, 509.

On *Cyperus ligularis*, Boqueron, 4854, Mayaguez, 1850, Santurce, 1852.

Cintractia utriculicola (P. Henn.) Clint. On *Rhynchospora corymbosa*, Mayaguez, 1061a. On *Rhynchospora aurea*, Mayaguez, 6783, 836a.

Ustilago Rouss

Ustilago affinis, E. and E. On *Stenotaphrum secundatum*, Arecibo, 1758, Bayamon, 1891, Ponte Santiago, 2458, *S. hermaphroditum*, Rio Piedras, 7604.

Ustilago zeae, (Beck.) Ung. On *Zea mays*, San German, 5812.

TILLETIACEAE

Burrillia Setch.

Burrillia echinodori, Clint., on *Echinodorus cordifolius*, Guanica, 335.

UREDINALES

PUCCINIACEAE

Puccinia Pers.

Puccinia hydrocotyles (Link) Cook.

On *Hydrocotyle australis* (Stevenson), 3979.

Puccinia huberi.

On *Panicum utowanaeum*, Mona Island, 6348.

Cerotelium Arth.

Cerotelium conavaliae.

On *Conavalia gladiata*, Rio Piedras, 9278, 9504.

Botryorhiza W. & O.

Botryorhiza hippocratae W. & O.

On *Hippocratea volubilis*, Rosario, 321, Ciales, 29, Mayaguez, 1714, 3915., Vega Baja, 1195, 2504, 514, Monte Alegrillo, 4721a, Luquillo Forest 5560, Mayaguez, 284, 1195 1198, 1010, 3915, 1205, 4721, 7033, San German, 7513, 7520, Mayaguez, 7470, 7590, Joyuda, 915, Maricao, 4721.

AURICULARIALES

Auricularia Bull.

Auricularia auricula (L.) Murrill, 113, 7004

Auricularia delicata, Mayaguez 2960, Monte Alegrillo, 2321.

DACRYOMYCETALES

DACRYOMYCETACEAE

Guepinia (Fries)

Guepinia spathularia (Schw.) Fr. 1605. (Guepinia palmiceps) Luquillo Forest, 5564.

EUBASIDII

AGARICALES

HYPOCHNACEAE

Hypochnus Ehrenb.

Hypochnus rubrocinctus. Ehbg., 1619.

THELEPHORACEAE

Peniophora Cooke

Peniophora cinerea (Fr.) Cke.

On *Citrus decumana*, Espinosa (Stevenson), 5087.

Corticium Pers.

Corticium salmonicolor, B. & Br.

On *Citrus sinesis*, Pueblo Viejo (Stevenson), 5436.

Corticium lactescens, Berk.

On rotten wood, Rio Piedras (Stevenson) 3357.

Corticium partentosum, B. & C.

On rotten wood, Campo Alegre (Stevenson), 3597.

Stereum Pers.

Stereum tuberculosum Fr.

On rotten wood, Rio Piedras (Stevenson), 3360.

Stereum fasciatum Schw.

On rotten wood, Rio Piedras (Stevenson) 1937.

Stereum lobatum Kunze, 7000.

HYDNACEAE

Irpex Fries.

Irpex lacteus Fr.

On rotten post, Bayamon (Stevenson), 5360.

POLYPORACEAE

Daedalea Pers.

Daedalea amanatei fes, Beauv. 1611, 1877, 2100, Monte Alegrillo, 2310, Cabo Rojo, 6360.

On rotten wood, Rio Piedras (Stevenson) 3359.

[illegible]

Trametes havannensis [illegible] Murrill, 449.

Hexagona Pollini

Hexagona daedalea (Link) Murrill, 2022, 2034, Monte Alegrillo, 625.

Hapalopius Karst.

Hapalopilus licnoides (Mont.) Murrill, 425. Indiera Fria. Maricao, 3401.

Hapalopilus gilvus (Schw.) Murrill, Maricao, 2118, 1566.

Inonotus Karst.

Inonotus corrosus Murrill, 1820.

On dead wood, Sardinera, Mona Island.

Irpiciporus Murrill

Irpiciporus lacteus (Fries) Murrill? No. 91.

Coriolus Quel

(Type *Polyporus zonatus* Fr.)

Coriolus hollickii, Murr. Monte Alegrillo, 4760.

Coriolus pusitus, (Fr.) Pat. Utuado, 4400, 760, 405, Mona Island, 1715, 450, 2101, 1608, Monte Alegrillo, 2315, Vega Baja, 1847, Rio Piedras (Stevenson), 5426c.

Coriolus versicolor, (L.) Quel. Mayaguez, 2179.

Coriolus membranaceus (Sw.) Pat., 2171, Monte Alegrillo 2304, 1219, 1242, 92.

Coriolus drummondii? (Klot.) Pat., 2051.

Coriolus chrotinctellus (Ber.) Murrill, 2355.

Coriolus pavonius (Hook.) Murrill, 1217, 1239.

Coriolus maximus (Mont.) Murrill, Cabo Rojo, 2098, 2099, 1240.

Coriolopsis Murrill

(Type *Polyporus occidentalis* Klot.)

Coriolopsis rigida (Berk. & Mont.) Murrill, 1414, 1696.

Coriolopsis occidentalis (Klotzsch) Murrill, 1238.

Coriolopsis crocata (Fries) Murrill, 2011.

Microporellus Murrill

(Type *Polyporus dealbatus* B. & C.)

Microporellus dealbatus (Berk. & Curt.) Murrill, 570.

Rigidoporus Murrill

(Type *Polyporus micromegas* Mont.)

Rigidoporus surinamensis (Miq.) Murrill, El Alto de la Bandera, 1614, Monte Alegrillo, 2302, Rio Piedras (Stevenson) 5426b.

Gloeophyllum Karst.

(Type *Lenzites saepiaria* Fr.)

Gloeophyllum striatum (Sw.) Murrill, 2505, 2102.

On dead wood, La Ramona, (Johnston), 4879.

Favolus Beauv.

Favolus subpulverulentus Berk. & Curt. 1237, Monte Alegrillo, 2311, 2320.

Fomes Gill.

Fomes auberianus (Mont.) Murrill, 1816, Maricao, 1916, 1216.

Elfvingia Karst

(Type *Fomes applanatus* (P.) Gil.)

Elfvingia fasciata (Sw.) Murrill, 1568, Monte Alegrillo, 2318, 2307, 406, 1215, 1413, 2121, 2119.

Elfvingia tornata (Pers.) Murrill, 1610, 2130, 2120, 1607, 1622, 2124, 762.

Pyropolyporus Murrill

Pyropolyporus dependens Murrill.

On dead wood, Mona Island, 1819.

Pycnoporus Karst.

(Type *Boletus cinnabarinus* Jacq.)

Pycnoporus sanguineus (L.) Murrill.

On dead wood, Mona Isand, 1876, 1754, 3891, 446, Añasco, 3538. Rio Piedras (Stevenson), 319.

Pogonomyces Murrill

(Type *Boletus hydnoides* Sw.)

Pogonomyces hydnoides (Sw.) Murrill, 1305, 1235, 2117, 547, 2098, 7003, Monte Alegrillo, 1411. Mona Island, 1688.

On rotten wood, Espinosa, (Stevenson), 2749.

AGARICACEAE

Schizophyllus Fries

Schizophyllus alneus (L.) Schr. Maricao, 4909, Mona Is-

land, 6417, Monte Alegrillo, 1359, 2309, Cataño, 1919, El Gigante, 1617, 195, 1567, 1840., Mona Island, 1687, 1849.

On dead palm log, Bayamon, (Stevenson), 389.

Lentinus Fries

Lentinus crinitus (L.) Fr.

On rotten wood, Rio Piedras, (Stevenson), 367.

On dead wood, Mona Island, 1878, 111, Cayey, 2927, 1606, 1565.

Lentinus hirtus (Fries.) Murrill, 7002, 1338, Sierra de Luquillo, 2764, 1613, 2118, 1605.

Lentinus strigosus (Schw.) Fr. Cabo Rojo, 6466.

Lentodium Morg.

Lentodium squamosum (Schf.) Murrill. (*Lentinus lepideus*), 2020.

Lepiota Fries

Lepiota rubrotincta? Pk. 1306.

NIDULARIALES

NIDULARIACEAE

Cyathus Haller

Cyathus roeppigii Tulasne

On bamboo post. (Stevenson), 5150.

Cyathus sp. Cabo Rojo, 6488.

FUNGI IMPERFECTI

SPHAEROPSIDALES

SPHAERIOIDACEAE

Darluca Cast.

Darluca filum (Biv.) Cast.

On *Puccinia eleocharidis* on Eleocharis, Mayaguez 481; on *Puccinia rivinae* on *Rivina humulus*, Desecheo Island, 1590; on *Kuehneola gossypii* on *Gossypium barbadense*, 5226; on *Puc-*

cinia cannae on Canna, 4168, 3610, 6292. San German 4168. On *Uromyces leptodermus* on *Lasiacis divaricata*, 4608, 4677, 6089, 447, 4793; on *Panicum barbinode*, 3953; on *Uredo aeschynomenis on Aeschynomene americana*, 3945; on *Puccinia huberi* on *Panicum trichoides*, Jayuya, 5981; on *Puccinia substriata*, on *Eriochloa subglabra*. Mayaguez 481. On *Puccinia gouaniae*, Utuado. A paraphysate, 8-spored ascomycete was found associated with the Darluca but was in such condition that it could not be determined.

Phyllosticta Pers.

Phyllosticta lantanae sp. nov.

Spots small 1-3 mm. in diameter, white above, tan colored below. Pycnidia 140 μ in diameter, ostiole 15-17 μ. Spores oblong, 7x2 μ.

On *Lantana odorata* Deséchco Island, 168, (type), Mona Island, 6416, 6440, Utuado, 6592, Guanica, 332.

The spore size is in close agreement with that of *P. gei* Bres. but it does not agree with this in other regards.

Phyllosticta clusiae sp. nov.

Spot large, 5 cm. or more in diameter, pale, border definite. Pycnidia numerous, scattered profusely over the blanched area, epiphyllous, sub-cuticular, erumpent, 110-140 μ in diameter, black, ostiolate. Conidia oblong-elliptical, obtuse, continuous, hyaline, 10x5 μ.

On dead leaves of *Clusia rosea*, Maricao, 739a (type).

It differs essentially in characters of the spot from *P. arthrophylli* Koord., which is the only species with which it shows agreement in size of spores.

Phyllosticta superficiale sp. nov.

Pycnidia straw colored, 68x94 μ in diameter. Ostiole 7 μ in diameter, dark bordered. Pycnidia entirely superficial borne on the hyaline mycelium among the surface hairs of the host. Spores somewhat irregular, oblong, 4-5x1.5 μ, hyaline, continuous.

On *Passifora sexflora*. Ponce, 4337 (type), 4377. Monte de Oro. 5730. The following numbers of the same hosts were in a spot of the same general appearance, but no pycnidia were found. El Consumo, 885. Adjuntas, 5822. Utuado, 4383, 6611, Luquillo Forest, 5557. Monte de Oro, 5674. Jajome Alto, 5686. Maricao, 880, 3466, 198, 4765. Guayama, 848.

Phyllosticta hybiscina E. and E.

On *Abutilon umbellatum*, Mona Island, 6120.

Septoria Fries

Septoria fici-indicae Vogt.

On *Opuntia dilenii*, Guanica 896. Sta. Isabela, 6825

The spores are slightly larger (34-37 μ) than the description calls for (24-28μ), and are clearly septate.

Septoria petroselini var. *apii*.

On *Apium graveolens*. Maricao 3476. El Gigante 8517, Aibonito 8454.

Septoria mikaniae Wint.

On Mikania sp. El Gigante, 8538.

Septoria lycopersici Speg.

On *Lycopersicum esculentum*. Rio Piedras (Stevenson), 3955.

Cicinnobolus Ehr.

Cicinnobolus cesatii D. By.

On *Erysiphe polygoni* (?). On *Cassia toro* San German, 5802, on *Cassia occidentalis*, Guayama, 5330.

Phomopsis Sacc.

Phomopsis vexans Harter.

On egg plant, Rio Piedras (Stevenson), 3953.

Phomopsis citri Faw.

On *Citrus decumana*, Rio Piedras (Stevenson), 3615.

Cytospora Ehrenb.

NECTRIOIDACEAE

Aschersonia Mont.

Aschersonia aleyrodis Web.

On *Psidium guayava*, Mayaguez, 6643, 493, 6362, Jayuya, 3120a, Utuado, 6615, Rio Piedras (Johnston), 4360.

Aschersonia cubensis B. & C.

On *Zamia integrifolia*, Sta. Ana, 6674. On scale on Citrus (Stevenson), 2649.

Fungi which closely resemble the above but of which specific determination could not be made were found on:

Miconia, Vega Alta, 4155; Palicourea, Manati, 4279; Wedelia, Vega Baja, 1928; Rondeletia, Maricao, 870; Gesneria, Maricao, 1002, 4670; Paullinia, 1207; Pilocarpus, Mayaguez, 7080; Inga, Mayaguez, 7474; Ocotea, Jajome Alto 8428, Vega Baja, 509; Blechnum,— ; *Pavonia typhalaea*, Mayaguez, 7400

Melasmia Lév.

Melasmia coccolobiae sp. nov.

Stromata hypophyllous, circular, about 2 mm. in diameter, black, each bearing several conidial cavities, strictly superficial but with the mycelium extending deep within the leaf. Pycnidia approximately circular, 60-90 μ in diameter, the base colorless and thin, resting on the cuticle, the pycnidial cavity covered by a thick, black, fungous cover. Conidiophores short. Conidia hyaline, continuous, acute at one end, rounded at the other, 8-10×2 μ.

On *Coccolobis*, Maricao, 3712 (type).

Melasmia nigra sp. nov.

Spots circular, visible above and below; from above 2-3 mm. in diameter, centers filled by a black stroma 1-2 mm. in diameter, border definite; from below black stroma surrounded by a pale zone 1-2 mm. broad. Stroma bearing several spore cavities mostly located at its margin. Mycelium permeating the leaf tissue in the diseased region. Stromata subcuticular

forming first under the upper epidermis, less frequent under the lower epidermis. Rupturing irregularly, no ostiole. Conidiophores short, parallel. Conidia irregularly oblong, tapering slightly to each end, continuous, hyaline to very pale straw-colored. Maximum size 24x5 μ. Numerous small apparently immature spores, 3x7 μ, issue from the spore cavities.

On *Inga laurina*, Las Marias, 423.

These fungi are referred to the form genus Melasmia without intending to imply that they are ascigerous forms of Rhytizma.

MELANCONIALES

MELANCONIACEAE

Gloeosporium Desm. & Mont.

Gloeosporium manihot Earle.

On *Manihot manihot*, Rio Piedras (Stevenson), 5134.

Gloeosporium violae B. & Br.

On Viola (cult.), Mayaguez, 6305.

Colletotrichum Corda

Colletotrichum lobeliae sp. nov.

Spots [illegible] the leaf, 2-3 mm. in diameter, [illegible] dark to purplish above, below tan-[illegible] water-like, border definite. Acervuli hypo-[illegible] over the diseased tissue. Setae numerous, [illegible] long, 6 μ thick at base, several septate, tapering, obtuse [illegible]. Spore cylindrical, somewhat irregular, obtuse, continuous, hyaline, 17-31x5-6 μ, mostly the larger size.

On *Lobelia assurgens* var. *portoricensis*, Maricao, 776 (type) 3513.

Colletotrichum lindemuthianum (Sacc. & Mag.) B. and Cav.

On cultivated beans, Rio Piedras (Stevenson), 3879.

Colletotrichum glocosporioides Penz.

On grape fruit leaves, Pueblo Viejo (Stevenson), 5003.

Colletotrichum piperis sp. nov.

Spots circular, 1-3 cm. in diameter, older portion dark and strongly marked by a series of concentric lines about 1 mm. apart; this older portion surrounded by a zone several millimeters wide of pale, evidently diseased leaf tissue. The oldest parts of the spot crack and portions fall away. Acervuli amphigenous, numerous, scattered throughout the darker portion of the spot, small, mostly 45-80 μ in diameter, thickly set with setae. Setae in many cases growing solitary or in groups, but without conidiophores. Setae 70.85 μ long, black, tapering obtuse. Conidiophores rather long, hyaline. Conidia oblong, obtuse, 17-27x7 μ, continuous, hyaline.

On *Piper umbellatum*, Caguas, 288 (type), 291a.

This fungus is remarkable for the small size of its acervuli which in many cases consist merely of two or three setae and an equal number of conidiophores or indeed in many cases of solitary setae without conidiophores, though a sufficient number of larger acervuli occur to show relation to the genus Colletotrichum. The fungus appears to be aggressively parasitic.

Colletotrichum omnivorum Hals.

On Pandanus sp. (cult.), Caguas, 290a.

The setae are not universally present.

Colletotrichum curvisetum sp. nov.

Spots circular, ashen at center, dark bordered. Acervuli variable, 30-80 μ in diameter with from 1 to 20 setae, often sterile, setae black, septate, acute, gracefully curved. Conidia oblong, obtuse, 17x5 μ, slightly smoky.

On *Hura crepitans*, Añasco, 3594, Mayaguez 5830, associated with *Cercospora hurae* and with a pycnidial fungus

The spots usually bear both the Colletotrichum and the Cercospora. The Colletotrichum is quite frequently sterile, the acervuli then consisting of merely setae or setae connected by a dark subiculum.

Colletotrichum erythrinae E. & E.

On *Pithecolobium unguis-cati*.

Coamo, 3973, 129, Boqueron, 4876, Guanica, 337a, 354a. Guanajibo, 8585, Mona Island 6137, 6094, Boqueron, 4876, Desecheo Island, 1576.

The fungus is evidently aggressively parasitic. The spots are quite characteristic and readily separable by the naked eye from the various other spots on this host.

Colletotrichum philodendri P. Henn.

On *Philodendron krebsii*, Arecibo-Lares Road 7226. Rio Tanama, 7849. I place this specimen under this name though there is not complete agreement with description. The acervuli are very large, 150-240 μ, much larger than description calls for, the setae, too, are obtuse, not acute.

Pestalozzia De Not.

Pestalozzia palmarum Cke.

On *Cocos nucifera*, Rio Piedras (Stevenson), 2220.

Pestalozzia coccolobae, Ell. and Ev.

On *Coccolobis uvifera*, Boqueron, 339b.

Pestalozzia funerea Desm.

On *Clusia rosea*, Maricao, 739.

On *Musa paradisica*, Rosario, 3796, Barros, 122, on Citrus (cult.) Utuado, 6809a, on *Acrista monticola*, Luquillo Forest 5553, on *Pavonia paludicola*, Mayaguez, 3966, on *Pithecolobium unguis-cati*, Mona Island, 6137, on *Inga vera*, Maricao, 205, on *Chrysobalanus icaco*, Santurce 258.

Melanconium Link

Melanconium sacchari Mass.

Saccharium officinarum, Mayaguez, No. ?

MONILIALES

MONILIACEAE

Acrostalagmus Corda

Acrostalagmus albus Preuss.

On Aphis on pepper, Rio Piedras (Stevenson), 5608.

Verticillium Nees

Verticillium heterocladium Penz.

LaRamona (Johnston), 1018.

Pellicularia Cooke

Pellicularia koleroga Cke.

On *Coffea arabica*, Mayaguez, 9488.

Monosporium Bon.

Monosporium uredinicolum sp. nov.

Mycelium floccose, byssoid, forming white, moldy spots 1-2 mm. in diameter over each rust sorus. Hyphae hyaline, septate, very sparsely dichotomously branched. Conidiophores indistinguishable from the mycelium, simple or sparsely dichotomously branched. Spores acrogenous, solitary or rarely catenulate, 12-15 μ, hyaline, continuous, cylindrical, obtuse at each end.

On *Coleosporium ipomoeae* on *Ipomoea batatas*, No. 6668 (type).

Host determined by Dr. Arthur.

This fungus was very common at the place of collection. A large field of sweet potatoes was badly rusted. Apparently every leaf in the field bore numerous rust sori and apparently every sorus was overgrown with this fungus. Its hyaline mycelium is found covering the sorus and growing in and around each rust spore.

Trichothecium Link

Cephalothecium Corda.

Trichothecium fusarioides. Sp. nov.

Colonies cottony, white, 2-5 mm. in diameter, surrounding the parasitized Phyllachora. Mycelium hyaline, septate, serile, mainly creeping, 2 μ thick, mainly branching at right angles. Conidiophores erect or ascending, long, 100 μ, and extremely attenuate, 1 μ at tip, septate, unbranched. Spores borne solitary but accumulating in bunches of 10 to 50 on the tips of the

conidiophores, hyaline, 1-septate, fusoid, acute at each end, 13-20x2½-3 μ.

On *Phyllachora perichaetosis* Speg. on Miconia sp., Maricao, 3610.

While this fungus bears some resemblance to *C. macrosporium* Speg., it differs essentially from it in several characters, particularly in the shape of the spores.

Diplosporium Bon.

Diplosporium album Bon var. *fungicolum*.

On *Parodiella cayaponiae*, Garman.

On *Cayaponia*, Utuado, 4360.

Blastotrichum Corda

Blastotrichum miconiae sp. nov.

Mycelium hyaline, forming white spots on under sides of leaves. Spot circular, indefinite, 2-5 mm. in diameter, pale to yellow above. Aerial mycelium very faint, creeping and branching profusely and irregularly, 3-5 μ thick. Erect mycelium mainly branching dichotomously, sometimes geniculate. Conidia 0-3 septate, cylindric, acute, 17-30x3-5 μ. Associated with and probably belonging to Bornmuellera on *Micoureamiegii*, Maricao, 4822, Utuado, 6871, 6872, Aguas Buenas 3[illegible]. Separated from previously described species by its parasitic habit and its association with Bornmuellera. (This is essentially a Fusarium without the sporodochium, i.e., having the conidiophores of the Moniliaceae.)

Monogrammia gen. nov.

Conidia on short, branched, hyaline conidiophores, one celled, hyaline, with six lobes all in one plane.

Monogrammia miconiae, sp. nov. Fig. 9.

Mycelium hyaline, hypophyllous, in small, 1-5 mm., circular spots. Conidiophores short, usually simple; conidia adhering in clusters, hyaline, continuous, six-lobed, shaped like a monogram of the letters H and I; attached to the conidiophores by

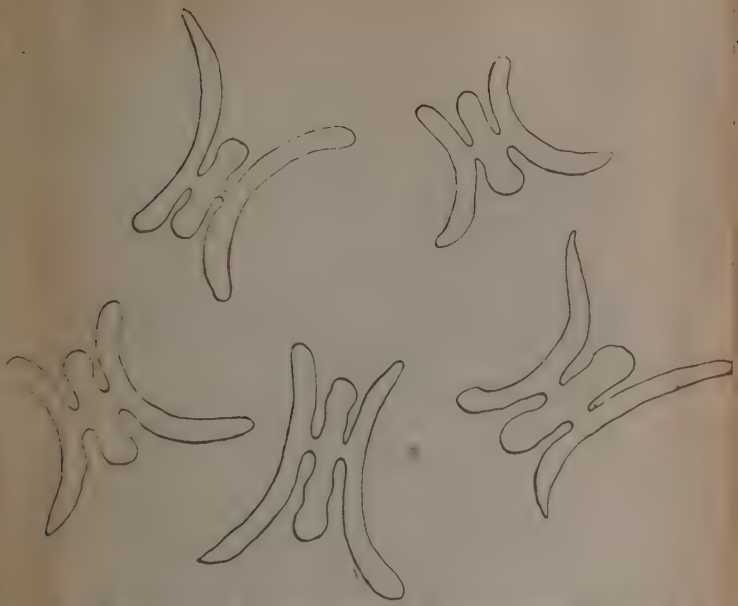


Fig. 9 *Monogrammia miconiae* typically formed spores. Drawn by J. MacInnes.

one central extremity. Spores 20-25x25-28 μ, extreme measurements; minimum median 10-12 μ, median longitudinal 12-15 μ.

On Miconia, associated with *Hyalosphaeria miconiae*, Yabucoa, 6705.

This most peculiar form was found on only one collection, but in that the monogram-formed spores were present in great abundance. This collection is also one that gave *Hyalosphaeria miconiae* and it is quite probable, since the two were intimately associated, that they are really connected though such a suggestion cannot be entertained as a certainty merely on circumstantial evidence.

Dematiaceae

Ellisiella, Sacc.

Ellisiella portoricensis sp. nov. Fig. 10.

Hypophyllous, forming large, 0.5-4 cm., black, velvety spots,

densely covered with the fungus. Conidiophores oblong, rounded, pale, base, angular, inverse radiate; stalk 10 μ long, 5 μ thick, base 7 μ high, 10 μ in diameter.

Sterile setae, very numerous, forming a velvety coat to the spot, black, simple, stiff, straight, 360 μ long, 4 μ wide, cells about 14 μ long. Tip pale, acute, base dark, abruptly enlarged. Conidia hyaline or very lightly tinted, pyriform, 17×7 μ, rounded at one end, acute-attenuate at other.

On dead leaves of *Clusia rosea*.

Arecibo 6800 (type), Desecheo Island 1595, Lajas, 7136a, Hormigueros, 7348.

Napicladium Thum.

Napicladium fumago Speg.

On *Miconia*, 6705, Arecibo, 6804.

On dark, sooty, epiphyllous blotches. The spores agree well with the figures and measurements of Spegazzini, (Fungi Puiggarienses p. 100) but the number of septa is often as much as eleven, with 3 to 5 more closely septa at each end. The mycelium which is associated with it is also more beaded than in the figure of Spegazzini.

Brachysporium Sacc.

Brachysporium stemphyliodes (Cd.) Sacc.

On *Anona montana*, Mayaguez, 7561.

The conidia measure only 20-24×11 μ, while the description of this species gives 35-37 μ. This perhaps is a distinct variety or species.

Alternaria Nees.

Alternaria solani (E. & M.) T. & G.

On Datura, Yauco, 3276.

On *Datura suaveolens*, Barros, 151, Coamo, 88, Aguas Buenas, 305a, on Solanaceae, Jajome Alto 5600.

Microclava gen. nov.

A Dematiaceous fungus with pale conidiophores [illegible] loaded out at the distal end and bearing [illegible]

Fig. 10. *Ellisiella portoricensis*

Type *M. miconia.*

Microclava miconia sp. nov. Fig. 11.

Mycelium internal, hyaline, 3 μ thick, septate, bearing many swellings, and small protuberances, branches arising at very obtuse angles. Conidiophores, simple, erect or ascending, straight, 30-100 μ, 2½ μ thick near top, tapering gradually to base, 2 μ, stipe about 4-septate, apex bearing 2 basal, straw-colored cells and 2 oval dark cells.

On *Miconia laevigata*. Aguas Buenas 302 (type).

This fungus forms dense growths of conidiophores over the leaf surface, often associated with a Microthyriaceous fungus,

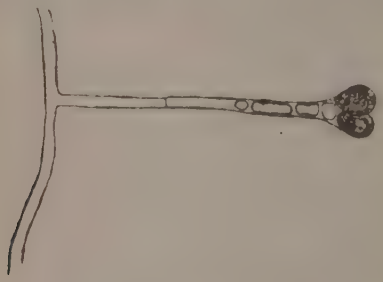


Fig. 11. *Microclava miconiae*
Hyaline mycelium with pale conidiophore and dark conidia. No. 302 type. Drawn by J. MacInnes.

though possibly not parasitic upon it. No close relative of this fungus seems to exist though it clearly belongs to the Dematiaceae. Its relationship is probably with some such form as Triposporium which if two-spored and with each spore reduced to one cell might simulate the condition here presented.

Microclava coccolobiae sp. nov.

Mycelium internal pale to brown. Conidiophores simple, about 70 μ high, 3 μ thick at base, stipe usually unicellular. Upper part broadening gradually to 8 μ in thickness, and consisting of three superimposed cells.

On *Coccoloba diversifolia*, Maricao, 8877.

Triposporium Corda

Triposporium stelligerum Speg.

On —— Aguas Buenas, 302, on *Rudolphia volubilis*, Maricao, 5439, Luquillo Forest, 5439a, on Piper, Maricao, 3371, on *Zamia integrifolia*, Monsallo, 9348, on *Chiococca alba*, Vega Baja, 7743, on *Hinterana canella*, Guayanilla, 8548, on *Ancna montana*, Mayaguez, 7561, on *Myrcia deflexa*, El Alto de la Bandera, 8268, on Didymopanax, 1246, on Miconia, 6705.

This peculiar fungus agrees very closely, even in minute details, with the South American form as described and figured by Spegazzini.

Passalora F. and Mont

Passalora cercropiae sp. nov.

Spots visible from above, below consisting of irregular, diffuse smoky blotches, 1-2 cm. in diameter. Conidiophores simple, smooth, black, over 600 μ long, slightly geniculate at the top, 3 μ thick. Conidia pale to black, oblong to clavate, apex obtuse, base often pointed, 2-celled, 2-27x3.5 μ.

On *Cecropia peltata*, Arecibo, 7790.

Cladosporium Link

Cladosporium calotropidis sp. nov.

Spots circular, 1-5 cm. in diameter, indefinite border, grayish-black, equally visible above and below but more definitely bordered below. Conidiophores cespitose from the stomata, amphigenous but much more abundant above, occupying every stoma within the diseased area. Each conidiophore cluster consists of from 10-20 conidiophores. Conidiophores short, 20x35 μ thick, 7 μ, simple, obtuse, dark, crooked, 1 or more septate. Conidia oval to cylindrical, 1-2 or 3-celled, mostly 2-celled, brown, 20-34x7 μ.

On *Calotropis procera*, Guayanilla, 9130 (type), 291.

Cladosporium guanicensis sp. nov.

Spots 1-5 mm. in diameter, roughly circular, definite, pale above, dark below. Conidiophore clusters hypophyllous, numerous, dense, so close together as to nearly cover the leaf. Conidiophores about 75 μ long, yellow. Conidia yellow, 2-celled, oval, obtuse, 17-24x8 μ.

On *Arg[illegible] mexicana*, Guanica, 347a, (type), Coamo, 620.

Cladosporium herbarum (Pers.) Lk.

On *Canna coccinea*, Villa Alba, 107; on *Canna glauca*, Utuado, 6000; on Canna Sp. Mayaguez, 3964, Aibonito, 8441. Associated with *Puccinia canaensis*. This fungus is very common forming a sooty coating upon the leaves. So far as I have observed it is not present except where the rust is and may be dependent upon the rust for its early sustenance.

On *Cyperus[illegible]* Beauverd, 356a, forming a dense, sooty coating over the leaves.

Cladosporium fulvum Cke.

On tomato, Florida Adentro, 7660, Utuado, 8026, Tanama Rio, 8851; Rio Icaco, 3768, Caguas 289a, Rio Piedras (Stevenson), 3818.

Cladosporium mikaniae sp. nov.

Spots diffuse, indefinite, 1-2 cm. in diameter, tawny. Mycelium abundant within and on the trichomes. Conidiophores hypophyllous, tawny. Conidia 34-48x3-4 μ, tawny, one-septate or occasionally with more septa. On Mikania, Las Marias, 314 (type).

Cladosporium citri Mas.

On Citrus sp., Bayamon (Stevenson), 2481.

Helminthosporium Link

Helminthosporium ravenelia Curt. and Berk.

On *Sporobulus vaequementia* Rio Piedras (Johnston), 4205.

Helminthosporium stahlii sp. nov.

Spots small and irregular or large and diffuse, pale above, dark below. Conidiophores numerous, lax, long, 155 μ, crooked, straw-colored to yellow, quite dark in mass, simple or branched. Conidia very uniform in size, 24x6-7 μ, and shape, long-elliptical to pyriform, rounded at the large end and with a slight apicule at the small end, when young continuous, later 1-seriate and when mature usually 3-septate.

On *Passiflora foetida*, Luquillo 6 (type), Mayaguez, 1699, Preston's Ranch, 6670.

In general the fungus is close to *H. molle* but is distinguished from it by the great regularity of its spores and the apiculate small end.

Helminthosporium varroniae sp. nov.

Hypophyllous. Mycelium superficial, fine, 0.5-1 μ, pale. Conidiophores dark, crooked, 4 μ thick, 160x200 μ long, solitary and scattered or in small groups.

Conidia usually 3-septate, pale straw colored, acute at each end, slightly constricted at the septa, 27-44x6-7 μ.

On Varronia, Florida Adentro, 7663. This fungus is particularly interesting because it closely resembles those Helminthosporiums which are so common on Meliola. This one is sufficiently different from them to be considered a separate species but near enough to show that it belongs in the same sub-generic group with them.

Helminthosporium caladii sp. nov.

Spots circular or oval, often 1.5-2 cm. in diameter; centers ashen-white, borders tan-colored. Clusters of conidiophores numerous throughout the diseased area, each consisting of many, usually more than 20, conidiophores. Conidiophores very crooked, long, 85 μ, pale yellow. Conidia oblong to cylindrical, obtuse, pale straw colored, 3-septate when mature, 27-41x7 μ.

On *Caladium bicolor* Mayaguez, 3860 (type), 75, 252, 292, 7587, 7401, Manati 4327, Añasco 8691, 3220, Rio Piedras (Stevenson) 386.

The spot produced is quite characteristic and gives evidence of the aggressive character of the parasite. The fungus is distinctive owing to its numerous long, crooked conidiophores.

It differs from *Cercospora Caladii* Cke. in septation and size of spores.

Helminthosporium spiculiferum E. & E.

On *Thrinax*, near Utuado, 6616.

Helminthisporium ravenelii.

On *Sporobolis indicus* El Alto de la Bandera, 8663, Jajome Alto, 8404. This "smut grass" is very common throughout the island.

Helminthosporium glabroides Stev.

On *Perisporium portoricense;* on *Calophyllum calaba,* 7489.

Cercospora Fries.

Cercospora violae Sacc.

On Viola sp., Rio Piedras (Stevenson), 5125.

Cercospora rigospora Atks.

On *Solanum nigrum,* Rio Piedras, (Stevenson), 5316.

Cercospora personata (B. & E.) E.

On *Arachis hypogaea,* Rio Piedras (Stevenson), 5121.

Cercospora nicotiana E. & E.

On *Nicotianum tobaccum,* Bayamon (Stevenson), 5517.

Cercospora citrullina Cke.

On *Citrullus vulgaris,* Pueblo Viejo (Stevenson), 5446.

Cercospora hurae sp. nov.

Spots circular or sometimes angular by venous limitation, 2x0.5-1 cm. in diameter, ashen in center, purplish border, with numerous concentric lines marking the dead leaf tissue visible equally from both sides of the leaves. Conidiophores amphigenous but much more abundant below, emerging from the stomata in small or large clusters, straw-colored about 35 μ long, geniculate. Conidia linear, many-septate, 50-85x3-4 μ, straw colored, obtuse.

On *Hura crepitans,* Mayaguez, 478, 5830 (type), 70, Añasco 3594.

Cercospora ricinella S. & B.

On Ricinus sps. Jayuya, 5973, Yauco, 3238, Peñuelas, 4889, Utuado, 6553, Coamo, 125, 60, 84.

Cercospora biformis Petch.

On *Passiflora sexflora,* Mayaguez, 1140.

Cercospora trichostigmae sp. nov.

Spots definite tan colored, angular, 3-10 mm. in diameter, Conidiophores hypophyllous, arising from small black tubercular masses, short, dark Conidia oblong, cylindrical, obtuse at each end, pale straw colored, 34x50x3 μ, many septate.

On *Trichostigma octandra*, Barceloneta, 9254 (type), Rio Piedras, 9470.

The conidiophores are so closely compacted as to make this a transition form between the Moniliales and Tuberculariales.

Cercosporia cucurbiticola P. Henn.

On Cayaponia Maricao, 4815. Rosario, 3777. The species of the two hosts which were not the same were not determined.

Cercospora achyranthis Syd.

On *Achyranthis aspera*, Guanica, 333, Hormigueros, 459a, Bayamon, 459. The type of this species was described from Japan and in some respects differs from the Porto Rican material, particularly in the length of the conidiophores and shape and character of the spot.

Cercospora alternantherae E. & L.

On *Alternanthera portoricensis,* Yauco, 3273, Coamo, 3976, 820, 8479.

Cercospora gilbertii Speg.

On *Iresine paniculata,* El Alto de la Bandera, 8286. This specimen differs from Spegazzini's description in that the spots are not pellucid, the spores too, are a trifle thicker.

Cercospora bixae, A. & N.

On *Bixa orellana*, Mayaguez, 56, Lares, 4845, Rosario, 3795. The last number also bears spots of entirely different character, small, with white center and purple border. In these is a Cercospora which appears quite different from *C. bixae.* On account of sparcity of material it is not described.

Cercospora biformis Petch.

On *Passiflora sexflora*, Mayaguez, 1140.

Cercospora trichophila sp. nov.

Spots circular, dead, 3-5 mm. in diameter. Conidiophores hypophyllous, yellow, very long, lax creeping and twining among the leaf hairs of the host. Conodia long, many-septate, 44-68x5 μ.

On *Helicteres jamaicensis*, Peñuelas, 4888.

On *Solanum torvum*, Mayaguez, 361, 1144, 1266, Utuado, 4091, 7982, Vega Baja, 486, Rio Tanama, 9205, 7832, Monacillo, 9339, Arecibo-Lares Road, 7227, 7296, Mayaguez, 7036, Lajas, 7156, Manati, 7693, Mona Island, 6431.

On *Solanum verbascifolium*, El Gigante, 8499, El Alto de la Bandera, 8260.

The fungus has much the habit of a Cladosporium but the spores of a Cercospora.

Cercospora flagellaris E. & M.

On Phytolacca icosandra, Maricao, 2323.

Cercospora portoricensis E.

On *Piper aduncum*, Mayaguez, 45a, 315, 1166, 7501, 7035, Peñuelas, 9143, Juana Diaz, 9131, Martin Peña, 9308, Coamo Springs, 8358, Tanama Rio, 7833, Jajome Alto, 8420, 1088, Arecibo-Lares Road, 7319, 7015, Añasco, 8735, Trujillo Alto, 9309, Peñuelas, 9132, Adjuntas 463, Corozal 412, Cayey 22.

On *Piper umbellatum*, Maricao, 8854, 7903, Rio Arecibo, 7771.

Cercospora caseariae sp. nov.

Spots ashen white, irregularly circular, definite, 2-4 mm. in diameter, surrounded by a purplish area a centimeter or more in diameter. Conidiophores in loose clusters. Conidiophores short, reaching but little above the epidermis. Conidia linear to clavate, straw colored, many septate, 50x4 μ, obtuse.

On *Casearia ramiflora*, Villa Alba, 99, Caguas, 292a, Luquillo Forest, 5556, Quebradillas, 5171, Utuado, 4691, 4675, 8051, San German, 4865, 5839, Cataño, 4190, Martin Peña, 9306, Mayaguez, 3940, 211, Aguada, 5086, Aguadilla, 4858,

Maricao, 370, Martin Peña, 9330, Vega Baja, 9268, Rio Tanama, 7925, Jayuya, x, Bayamon, 387, Preston's Ranch, 6698, Sta. Catalina 2720.

On *Casearia sylvestris*, Mayaguez, 524, 3900, 76, 3895, Coamo, 7275, Rio Tanama, 7884, 7855, Hormigueros, 7304, Lajas, 7177, Corozal, 406, Quebradillas, 5010, 5004, 7273, Ponce, 8682, Luquillo Forest, 5431, Monte de Oro, 5714.

On *Casearia guianensis*, Rosario, 5801, Corozal, 420, Mayaguez, 1386.

The spots produced on *C. sylvestris* are much smaller than on *C. ramiflora*, usually only 1-2 mm. in diameter. These on *C. guianensis* are intermediate in size.

Cercospora thouiniae sp. nov.

Spot indefinite diffuse, the diseased area showing above merely slightly discolored, below marked only by the ferruginous fungus. Conidiophores hypophyllous, abundant, long, lax, ferruginous smooth, crooked, slightly darker than the spores. Conidia, long, narrow, 58-72x5-7 μ, usually clavate, many-septate.

On *Thouinia striata*, Maricao, 751.

Cercospora bernardiae sp. nov.

Spots small, circular, 1-3 mm. in diameter. Yellow above, pale below, definite. Conidiophores epiphyllous in dense clusters, almost tuberculate, short, about 35 μ long, pale yellow. Conidia linear 51-68x7 μ obtuse, 3-many septate, very faintly straw tinted.

On *Bernardia bernardia*, Guanica, 355a.

The fungus is especially interesting since its general aspect is not that of a Cercospora and on account of its almost tubercular habit.

Cercospora mikaniacola sp.

Spot circular, small, 1-2 mm. in diameter, or by concentric enlargement, 5-10 mm. in diameter, sordid white in center, dark bordered, definite. Conidiophores hypophyllous, cespitose, fascicles of many conidiophores, or often solitary. Co-

rédiophores pale b[illegible] μ thick, 50-100 μ long, or more; conidial spores 160 μ long, geniculate [illegible] linear to whip shaped, pale, 34-78x3.5 μ.

On Mikania sp. [illegible] 7923, (type), Aguado, 5083, Maricao, 4700.

Cercospora beticola Sacc.

On *Beta vulgaris*, Rio Piedras (Stevenson), 5550.

Cercospora henningsii Allesch.

On Cassava, Bayamon (Stevenson), 3932.

Cercospora atricincta.

On Zinnia sp. Espinosa (Stevenson), 3130.

Cercosporidium Earle

Cercosporidium helleri E.

Passalora helleri E.

On *Sphenoclea zeylandica* Mayaguez 3757.

STILBACEAE

Stilbella, Lindau

Stilbella flavida (Cke.) Kohl.

On coffee, Dos Bocas, 6565 [illegible], 5975; Ponce 4269; Monte de Oro, 5720, Rio Maricao above Maricao, 3687, El Ungante, 8488; Arecibo Lares Road, 7245.

On *Bryophyllum pinnatum*, Maricao, 385.

On *Dyschotria uliginosa*, El Alto de la Bandera, 9047, on *Elephantopus mollis*, Jayuya, 467, Monte de Oro, 5740.

On *Piper macrophyllum* Monte de Oro, 5734, 5722, on *Synedrella nodiflora*, Ponce, 4268.

TUBERCULARIACEAE

Microcera Desm.

Microcera fujikuroi.

On grapefruit, Pueblo Viejo (Stevenson), 5008.

Epicoccum Link

Epicoccum neglectum, Desm.

On Cestrum, Cabo Rojo, 6451.

The fungus is apparently parasitic. The sporodochia are large, 750 μ in diameter, 320 μ high. The conidia are about 10 μ [illegible] smaller than the descriptions [illegible]

Pucciniopsis Speg.

Pucciniopsis caricae Earle.

On *Carica papaya*, Rio Piedras (Johnston), 1472.

Illosporium Mart.

Illosporium [illegible] sp. nov.

Spots circular 1-2 cm. in diameter, discolored border indefinite [illegible] hypophyllous, [illegible] nearly every stoma in the diseased area. Mycelium substomatal, very fine, about 1 μ, hyaline, [illegible] and crooked. Sporodochia nearly spherical but slightly flattened on the top and slightly wedge-shaped below as they contract to the stomata, waxy, pale, about 95 μ in diameter. Conidiophores at first parallel, simple, about 35×1 μ, later growing out into long mycelium like structures. Spores few, oblong, continuous, hyaline, obtuse, 10×3 μ.

On *Commelina elegans*, Aguada, 5109, Mt. Cuyate 8485, on *Commelina longicaules*, 5081, Cayuas, 287a, Hormigueros, 224; Rosario, 480; Guayanilla, 5923; Las Marias, 8248.

This fungus is very common on its widespread host and is conspicuous in its effects and vigorously parasitic. Although the sporodochia are numerous, spores are produced very sparingly. The sporodochia are distinctly waxy in texture, and when old have numerous long mycelial threads growing out from their upper surface.

Mycelia sterilia

Sclerotium Tode

Sclerotium portoricense, sp. nov.

Mycelium scant, hyaline, crooked, septate. Sclerotia superficial on leaves, culms, or leaf sheaths or more often under the

Fig. 12. Sporodochium of *Dicosporium commelinae*. Drawn by J. MacInnes.

leaf sheaths, 280 μ in diameter, flattened. Thickly set with long, 800-1000 μ, fine, 3 μ, brown, septate hairs which arise as outgrowths from the surface layer of the sclerotium. Surface layer of cells dark, firmly adhering. Internal cells hyaline, angular, 10-14 μ in diameter, consisting of a thick wall, 3-4 μ, and a central granular protoplasmic area.

On *Cynodon dactylon*.

Santurce 378 (type), also a specimen by Stevenson Dec. 1916.

This structure is very remarkable and it is regrettable that more of the life history is not known.

FUNGI OF UNKNOWN AFFINITY

Graphiola Poit.

Graphiola phoenicis (Mong.) Poit.

On *Phoenix dactylifera*, Mayaguez, 896, 3503, Coamo Springs, 8337; on *Inodes causiarum*, Jayuya 6731a, 3756; on Phoenix (?) Guanica (Smythe) 2563; on *Thrinax preceps*, Utuado, 8017.

Fig. 13. *Sclerotium portoricense* sp. nov.

a. Sclerotium showing general appearance of sclerotium and the hairs.
b. A bit of the surface layer showing reticulations.
c. The hyaline internal cells showing thick wall and granular interior.
d. Detail of one of the perithecial hairs.

PARASITIC ALGAE

Cephaleuros virescens Ktz.

On *Psidium guajava*, Mayaguez, 155, 5819; on *Myrcia deflexa*, Mayaguez Mesa, 7436, Maricao, 5056; on *Cupania americana*, 9144; on *Nectandra patens*, 1750; on *Miconia laevigata*, Mayaguez, 7373; on *Inga laurina*, Willd., Jajome Alto, 7023, Mayaguez, 7038, 7049; on *Jambosa vulgaris*, Añasco, 8743; on *Artocarpus incisa*, 196, 1222; on *Coccolobis diversifolia*, Maricao, 8877, on *Ocotea leucoxylon*, Mayaguez, 7393; on Myrcia, Rosario, 4815; on *Cestrum laurifolium*, Mayaguez, 8158, 7088; on *Dendropanax arboreum*, Tanama Rio, 7955; on *Sonidesia lindeniana*, Jajome Alto 8380; on *Lasiacis scartziana*, Jajome Alto, 5657, on Citrus sp. Mayaguez, 1017;

on *Citrus decumana*, Rio Piedras (Stevenson), 2327; on *Achras zapota*, Rio Piedras (Stevenson), 3244. On *Aerodictidium salicifolium*, Hormigueros 7360.

Crustose lichens on leaves.

Heterothecium phyllocharis.

Rencalmia antillarum, Maricao, 743.

THE OCCURRENCE OF *ALTERNARIA* IN A CHARACTERISTIC APPLE SPOT, AND AN APPLE ROT CAUSED BY *GLIOCLADIUM VIRIDE*

By Frances Jean MacInnes

The twenty-five apples on which this work is based came from Harristown, Illinois, early in July, and were not nearly mature. The spots were in various stages of development, making it possible to study the probable progress of the disease. Nothing is known of the conditions under which they grew, nor of the time the infection started.

THE DISEASE ON THE FRUIT

The spot on the fruit is striking in its early stages, due to the decided color change and in the later stages to the distinct margin as well as to the darkened skin and tissue. The outer skin of the [illegible] soft and watery, [illegible] cult cut. Only a few millimeters beneath the skin [illegible] juice. The [illegible] destroy [illegible] but it is unsightly, and [illegible] decay salable.

The earliest stage of the disease [illegible] often [illegible] tissue change in the color of the fruit. A spot about 2 cm in diameter was changed from a green to a dull [illegible] mottled with red. A later stage showed a spot slightly darker and mottled with both red and brown. What was considered a still more developed spot possessed the same characteristics as those above but in the center was a slightly sunken irregular brown spot with a distinct border. This spot was shiny hard, and from 2 to 4 mm. in diameter.

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